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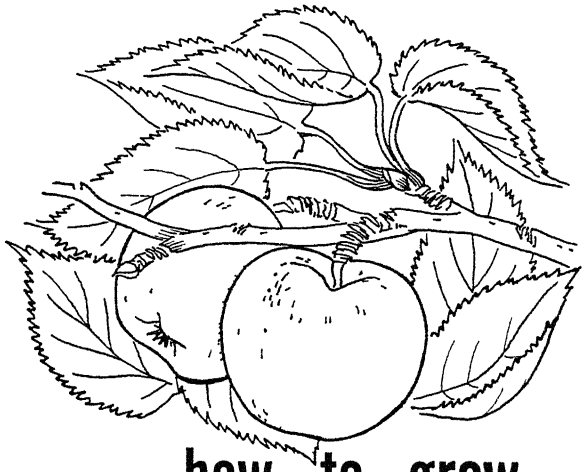

how to grow *tree fruits* in the home garden

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how to grow **TREE FRUITS** in the home garden

IN RECENT YEARS, more and more people have become interested in producing fruit in backyard gardens or small farm orchards. Diligent, well-informed, and well-equipped gardeners may produce quality fruit on a small scale. Quite often, however, all efforts lead to disappointment or actually financial loss.

Hazards and Pitfalls

Small scale producers can run into four principal difficulties:

- Lack of equipment, knowledge, or time for insect and disease control.
- Poor site.
- Poor soil.
- Lack of adequate space if room is to be left for vegetables or flowers.

Insect and disease control is by far the most serious difficulty. Generally, it is the principal cause for failure. If pests are not controlled, fruit may be of little value or actually inedible.

Equipment for spraying and dusting a small orchard is rather expensive considering its use. Also, home gardeners frequently do not have information or time to control pests. Perhaps this problem will be less serious as new and better spray materials and equipment are developed.

An elevated frost-free site, with a reasonably fertile well-drained soil, is essential for high yields of fruit year after year. Growers who have back yards without these factors should refrain from planting fruit trees. Otherwise they must be satisfied with lower yields and even crop failure in unfavorable seasons.

If your backyard garden is rather small, you probably will get more pleasure and produce by confining attention to berries, vegetables, and flowers.

If you are properly equipped and desire to raise tree fruits in spite of the hazards involved, let us consider variety selection, cultural practices, pruning, and other factors which influence the success or failure of the fruit-growing enterprise.

Selection of Varieties

Plant fruit varieties in the home garden that are dependable and productive commercial sorts. Unfortunately, the home gardener often wants to plant varieties with special qualities. These may be unreliable producers because the plants lack vigor or are susceptible to insects or diseases. In some cases good yields and dependability may, in part, be sacrificed for high quality. As a rule, however, this is a hazardous procedure except for experienced gardeners.

TABLE 1.—**Fruit varieties for planting in Ohio, arranged according to ripening date at Wooster, Ohio**

Names in bold type are suggested as first choice varieties

		Apple	Pear	Peach*		Plum†	
August		**Yellow Transparent**		Mikado	Y		
		Lodi		**Erly-Red-Fre**	W		
		Melba		Redhaven	Y		
	10						
			Laxton's Superb	**Cumberland**	W	Early Laxton	P
				Golden Jubilee	Y		
				Fairhaven	Y		
	20						
		Gravenstein	Clapp Favorite	**Early Halehaven**	Y	Bradshaw	P
			Bartlett	Halehaven	Y		
September		**Wealthy**		Kalhaven	Y	Imperial Epineuse	P
				Belle of Georgia	W		
	10						
			Gorham	**Elberta**	W	**Stanley**	P
		McIntosh		S. H. Hale	Y		
			Seckel	Lizzie	Y	Agen	P
	20						
		Cortland		Salberta	Y	Reine Claude	G
		Franklin	Bosc				
		Grimes Golden				Albion	P
October		**Jonathan**					
		Delicious	**Dana Hovey**				
	10						
			Kieffer				
		Melrose					
		Golden Delicious					
	20						
		Rome Beauty					
		Stayman Winesap					

* In peaches, W indicate white-fleshed, and Y means yellow-fleshed types.
† In plums, G indicates Gage type with high dessert quality, whereas P refers to the purple prune-type plums.

Varieties in Table 1 are in approximate order of ripening at Wooster, Ohio. Ripening date in southern Ohio are usually a week or two earlier. Dates for northern Ohio would be a few days later. Variety names printed in bold type are most satisfactory under average conditions. Select them when space is available for only a few trees.

Variety Descriptions—given in nursery catalogs are fairly accurate. Confine selections to the varieties listed here. They are known to be reasonably dependable. Use caution in purchasing new and unknown sorts which are advertised in flowery, and sometimes exaggerated, terms.

Apples.—Of the apples listed in Table 1, *Yellow Transparent* is a fine early cooking variety. *Melba* is the first apple of the season to have excellent dessert quality. *Franklin* is of excellent quality for dessert and cooking. It is an Ohio Station cross between McIntosh and Delicious. It possesses some of the characteristics of both parents. *McIntosh* and *Cortland* are not well adapted to southern Ohio. *Grimes Golden* is better for southern than for northern Ohio. Only the

varieties ripening in October should be planted if the fruit is to be stored for any length of time during the fall and winter. You may prefer the red strains of the different apples to the regular strains whenever such red strains are available.

If you desire crab apples try *Dolgo,* which ripens in early August or *Hyslop,* ripening about the middle of September.

Cherries—are either sour or sweet. *Montmorency,* ripening in mid-July at Wooster, is the best sour cherry for home or commercial planting in Ohio. Use *Early Richmond* or *Montearly* for early cherries. *Early Richmond* ripens in late June and *Montearly* ripens in early July. *English Morello* is a late ripening sort with red juice which is ready for use about a week after Montmorency.

Of the sweet cherries, *Windsor* and *Schmidt* are the best red types and ripen about the middle of July. *Emperor Francis* ripening the first week in July, and *Napoleon,* which ripens with *Schmidt,* are recommended yellow-red varieties. If you want an early sweet cherry, try *Lyons.* It is a red sort ripening about the third week in June.

Pears—all except *Kieffer,* are quite susceptible to fire blight. *Kieffer* is only fair in quality but somewhat resistant to this disease.

A blight resistant stock such as *Old Home* on which the desired variety has been budded is recommended if dwarf pear stock is not used.

Old Home stock will not make the budded variety on it more resistant, but the framework of the tree which is *Old Home* will be retained if fire-blight causes extensive damage.

Peaches—which ripen in August are best for the backyard orchard. As a rule they are not seriously infested by the larvae of the Oriental Fruit Moth. Varieties ripening in September, and especially those ripening after *Elberta,* may be damaged seriously by this insect.

Plums.—The *Stanley* plum is by far the most dependable. *Bradshaw* is quite susceptible to brown rot. *Imperial Epineuse* is a European plum with very high dessert quality. *Agen* is a small-fruited, rather high quality, prune plum which makes a nice canned product if small sized fruit are desired.

Japanese plums have not been included in Table 1 because they are not well adapted to Ohio conditions. Japanese plums bloom earlier than the European type and are, therefore, more likely to be injured by spring frosts. They also are more susceptible to brown rot.

If *Damson* plums are desired for preserving, plan either *French* or *Shropshire Damson.* These ripen in late September about the same time as *Albion.*

Dwarf Fruit Trees—are now offered by many nurseries in the popular varieties. They are much smaller, bear fruit earlier in life, and can be sprayed satisfactorily with hand-operated equipment.

Standard apple and pear trees usually become too large to permit effective pest control by the time they are 8 to 10 years of age. Then, too, limited space in the home garden often does not permit planting standard size trees.

The dwarfing effect usually comes from the use of a dwarfing rootstock. Standard varieties are budded or grafted to the rootstock at the surface of the soil. Because of the limited and shallow root system of the dwarfing rootstock, use a trunk support such as a stake, post, or trellis for the dwarf trees. It is also important that the point of union between the dwarfing rootstock and the variety be just above the ground level. Otherwise if the union is below the ground level, roots may develop from the standard variety portion, and a standard size tree will result.

Most nurseries use a dwarfing rootstock called Malling IX for apple trees. This is a true dwarf and well adapted to home gardens. For pear trees the *Angers Quince* is used for dwarfing.

At the present time there are no satisfactory rootstocks for producing dwarf cherry, plum, or peach trees. In fact, these fruits come into bearing at a rather young age, and there is less need for dwarf types than for apples and pears.

Pollination and Fruit Setting

Most people know that flowers of fruit trees must be pollinated if the small fruit, which is a part of the flower, is to grow into an edible product. You must consider pollination when you select varieties.

In general, you will have to plant two varieties of apples to provide for cross-pollination. *Stayman Winesap,* however, has infertile pollen and therefore will not pollinate other varieties in the list in Table 1.

Pears also are largely self-unfruitful. Most varieties are cross-fruitful, except *Bartlett* and *Seckel.*

Peaches are for the most part self-fruitful and no provision need be made for cross-pollination. *J. H. Hale* and *Mikado i*n Table 1 are exceptions to this rule and should not be planted alone.

Of the European plums listed in Table 1, *Stanley, Agen,* and *Reine Claude* have been reported as being partly or fully self-fruitful in certain localities. Other varieties are more of less self-unfruitful. Best procedure is to plant two varieties and thus provide for cross-pollination. *French* and *Shropshire Damson* plums are self-fruitful. Japanese plums are largely self-unfruitful.

All commonly grown sour cherry varieties are self-fruitful. Sweet cherries are self-unfruitful so plant at least two or three varieties for cross-pollination.

Fruit setting is influenced by many other factors. Pollen of fruit trees is sticky and is not moved from one flower to another by wind. If insects are not present in sufficient numbers to carry the

pollen or if their activity is reduced because of cold, rain, or wind, pollination may not take place. Freezing damage, unseasonably hot weather, diseases such as brown rot, fire blight, or scab, spray injury, and devitalized blossoms on weak trees may also reduce fruit set.

Climate, Site, and Soil

Varieties listed are quite hardy and well adapted to Ohio climatic conditions. Even so, plant fruit trees on elevated, sloping land, which is free from frost pockets. As a backyard gardener you may have no opportunity to select a favorable site, as does a farmer with a large acreage. The fact remains however, that the trees should be on as high ground as is available.

A deep, fertile, well-drained soil is best for most fruit plants. Sweet cherries in particular grow poorly or die out on poorly drained locations. Sour cherries and peaches also are intolerant of wet soils. Pears and plums, and possibly apples, may produce fairly good crops on land which is too wet for peaches and cherries.

Propagation and Selection of Plants

Purchase well-grown, healthy, 1- or 2-year-old trees. In most cases large 1-year-old plants are best. Older plants, particularly the so-called bearing-age trees, are harder to transplant than younger trees. Scaffold branches may be poorly located and have bad crotches or may be damaged in shipment.

Fruit trees do not come true-to-name from seeds. In order to have a known variety it is necessary to insert grafts or buds into suitable rootstocks. The entire procedure takes time and experience. In most cases the practice is not advisable for the backyard planting or small orchard.

Planning and Planting

Before planting your trees carefully plan the number of trees to be set out and their arrangement in the garden or orchard. Figure 1 illustrates comparative ripening periods of the various fruits. It may be useful in selecting varieties to give a more or less continuous supply of fresh fruit from early June until November.

Consider carefully the space required by the various types of fruit trees and the yields which you may expect. By using the information which is contained in Table 2, you can determine how to lay out your small garden or orchard so it will yield the greatest amount of fruit.

Trees growing on favorable sites and receiving good care may produce higher yields than the average figures quoted in Table 2. Under unfavorable conditions yields may, of course, be considerably lower.

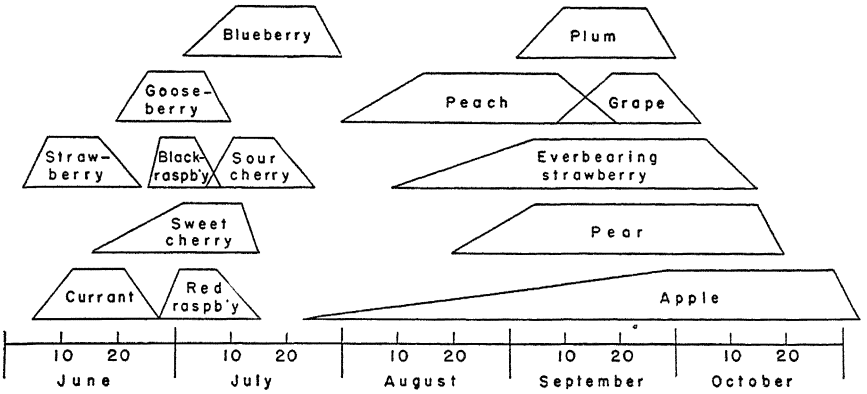

Fig. 1.—Ripening periods for different fruits at Wooster, Ohio

Early spring (during April) is usually considered to be the best time to set out fruit trees. On well-drained soils, however, most fruit trees, and especially apples and pears, may be planted satisfactorily in the fall in late October or November.

Set Plants—in a well prepared soil, preferably one which has been plowed and harrowed carefully. If such preparation is impossible or seems inadvisable, thoroughly spade a large circle where each tree is to be planted. Dig a hole large enough to allow the roots to spread their full length without folding. Remove all broken and diseased roots.

Set each tree slightly deeper in the ground than it was in the nursery row. Place the point of union of the bud and rootstock about level with, or slightly above, the surface of the soil.

Add fertile topsoil around the tree roots and tramp down firmly. If a strong wind blows more or less constantly over the site where the trees are to be planted, lean them slightly into the wind.

For best results set out the trees as soon as you receive them from the nursery. If the soil is dry, apply water around the roots when you plant them.

TABLE 2.—Planting distance, yield, and time interval from planting to fruiting of tree fruits grown in Ohio

	Minimum distance between trees	Annual yield per plant	Time from planting to fruiting
	Feet		*Years*
Apple—dwarf	10–15	½– 1 bu.	2– 3
semi dwarf	15–25	2– 5 bu.	4– 6
standard	35–40	5–10 bu.	6–10
Cherry—sour	20–25	25–50 qt.	4– 6
sweet	30	25–50 qt.	6– 8
Peach	20	1– 3 bu.	3– 4
Pear—dwarf	10–15	½– 1 bu.	3– 4
standard	20–25	2– 4 bu.	6– 8
Plum	20–25	1– 5 bu.	5– 8

Fig. 2.—Fertilizer for tree fruits is spread on the mulch in a ring about 2 feet from the trunk. Note ¼-inch mesh galvanized cloth around the tree base for rabbit and mouse protection.

Culture

Most practical system of soil management for most fruit trees in a backyard or small orchard is probably the use of sod. Adequate quantities of nitrogenous fertilizer must be applied to promote sufficient growth for good fruit production. Better growth and yields usually will be obtained if straw, leaves, or other mulching material can be spread on top of the sod under the branches of the trees as illustrated in Fig. 2. Such a mulch shows growth of grass and weeds and thus reduces competition for nutrients and moisture. If you follow the sod system (without mulch) during the first few years of the orchard, keep a 5- or 6-foot circle of soil around the trees free of weeds.

Early season cultivation until mid-July, followed by a summer cover crop of soybeans or weeds and a winter cover crop of rye, is a desirable system of soil management for a young orchard. Orchardists who have cultural equipment available often follow this system throughout the lifetime of peaches and cherries. It is less practical for apples, plums, and pears.

Do not cultivate or mulch pears to encourage growth as much as with other fruits. Fire blight is a serious disease of pears and is partly controlled by maintaining a slow rate of tree growth. Twigs of slow-growing pear trees are more woody and not as susceptible to the fire blight organism as are succulent vegetative shoots. For this reason, always grow pears in sod with small applications of nitrogen, or none at all, and never any manure.

If amount of land for your orchard and garden is limited, it may be advisable to plant vegetables or berries between the rows of young trees. This practice may be followed to good advantage until the trees are 3 or 4 years old.

Fertilization

In most Ohio orchards, nitrogen is the only nutrient element needed by fruit trees which is not provided in adequate amounts by the soil. As a general rule, each spring apply about ¼ pound of nitrate of soda or ammonium sulfate on *apples* and *plums* per year of tree age. In other words, an 8-year-old tree would receive 2 pounds,

spread evenly on the land under the branches of the tree. Ammonium nitrate also may be used, but since it contains nearly twice as much nitrogen, apply only one-half or two-thirds as much. Give *peaches* and *cherries* about one-third pound of nitrate of soda or ammonium sulfate per year of age.

Modify recommendations according to the natural fertility of the soil and the vigor of the trees. For good fruit production, young and middle-aged bearing *apple* and *plum* trees probably should make an average shoot growth of 8 to 14 inches each year. *Peaches* and *cherries* should produce about 10 to 15 inches of shoot growth each year. If less growth is obtained, increase the amount of nitrogenous fertilizer somewhat. If the trees are too vigorous, reduce the application.

Use manure around apples, peaches, plums, and cherries in only moderate amounts. Spread in small quantities in early spring. Avoid heavy applications, especially if poultry manure is used. Watch the terminal shoot growth of the trees and regulate the fertilizer application to maintain growth approximately at the rates suggested above.

Hold pear growth at a relatively slow rate to keep damage by fire blight at a minimum. Shoot growth of young and middle-aged bearing pear trees should not exceed 6 to 10 inches annually. On good soils sufficient growth may be secured without the use of any fertilizer. Never apply manure *around pears under any circumstances.* If terminal growth is quite short, yields are low, and fruit is small in size, use a *light* application of a nitrogenous fertilizer. As previously indicated, grow pears in a sod and do not mulch or cultivate.

Pruning and Training

Pruning is one of the most important jobs in the orchard. It is not especially difficult but does take a moderate amount of thought and skill if the best results are to be obtained. Purpose of pruning and training is to make it possible for the plant to produce a maximum yield of high quality fruit over a relatively long period of years. Development of plant strength is an important consideration.

Pruning has a dwarfing effect on the tree and delays somewhat the time at which the young tree starts to bear fruit. For this reason prune the plants as little as possible and yet develop a strong, long-lived tree.

Before describing the actual pruning of young and bearing trees, it may be well to consider a few basic points that apply to all types and ages of fruit trees:

- Prune fruit trees in March or April. Trees which are pruned in autumn or early winter may suffer serious winter injury if extremely cold weather is encountered.

- Leave no stubs. Make all cuts close to a main branch or strong lateral. Stubs dry out and crack and furnish a spot through which rot can enter the tree and possibly cause a large branch to die or

break. Smooth cuts allow callus tissue to grow over and heal the wound.

- Make a cut on the under side of a large branch first to avoid stripping the bark from the trunk when the branch falls from the tree.
- Remove broken, diseased, or damaged branches before starting to select scaffold branches and before removing any of the smaller twigs and branches.

Two pruning systems are used generally . . . the modified-leader and the open-center or vase.

The *modified-leader system* is commonly followed for *apples, pears, plums,* and *cherries,* and to a certain extent with *peaches.* In this system space the main or scaffold branches of the tree at strategic distances up and down and around a central trunk. You can produce a strong, long-lived tree if you use this system properly.

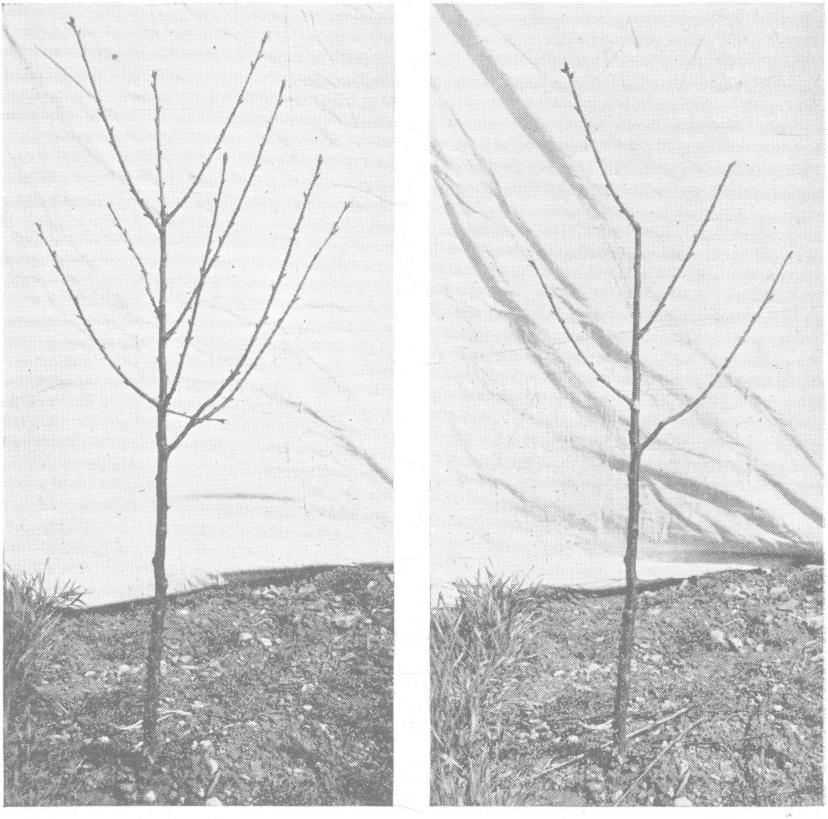

Fig. 3.—One-year sour cherry before and after pruning at planting time. Modified leader has been established. Three wide-angled branches have been left well spaced around the leader. It may be possible in later prunings to eliminate one or more of these and use branches starting higher on the trunk for wide scaffold spacing.

An *open-center tree* is one in which the scaffold branches arise rather close together near the top on a relatively short trunk. These branches spread out and create a more or less vase-shaped tree. This system is commonly used with peaches.

A one-year-old *apple, pear, plum,* or *cherry* tree for which you want a modified leader system may or may not have lateral branches on the trunk when it is received from the nursery. If no laterals are present head the "whip" at a height of about 3 feet. Some horticulturists suggest heading as high as 4 feet or higher, but it is usually easier to develop a reasonably low tree by heading at about 3 feet.

During the first growing season the whip will produce laterals

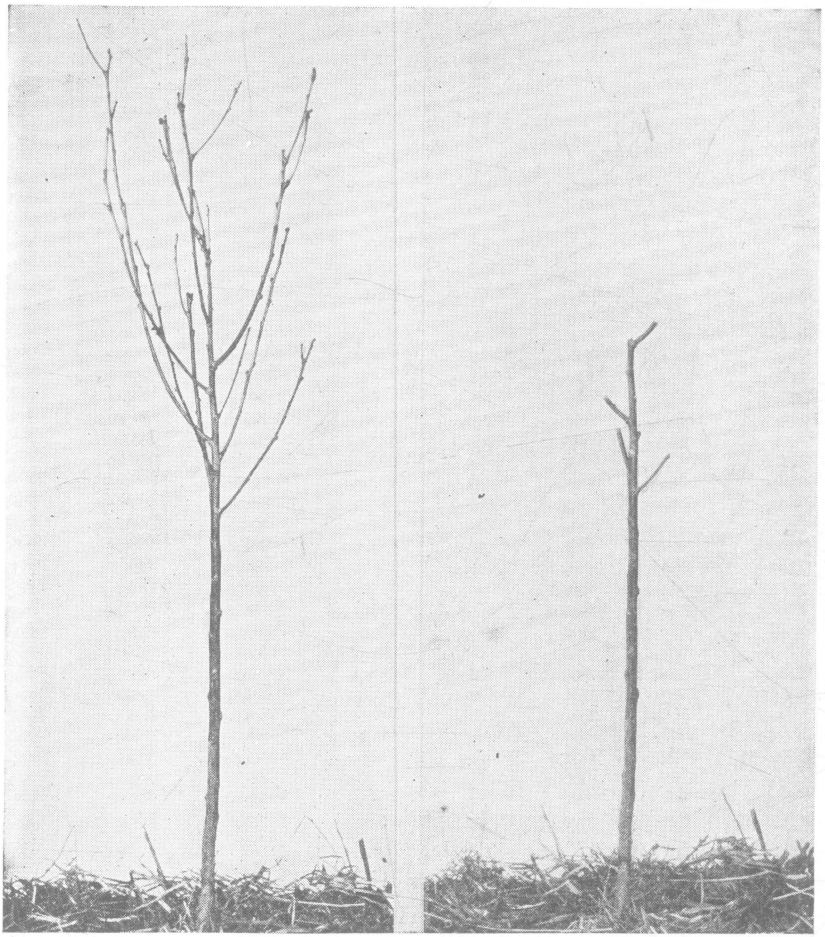

Fig. 4.—(a) One-year-old peach tree after planting. (b) Same tree after pruning. The tree was cut back to about 24 inches. Four well distributed side branches were left and cut back to short stubs to assist in developing symmetrical open head.

from which to select the scaffold branches. The lowest scaffold branch should be about 18 to 24 inches above the ground. Select four or five main branches, each about 6 inches above the other and equally spaced around the trunk. Figure 3 illustrates the selection of scaffold branches on a 1-year-old sour cherry tree. As illustrated in these pictures, frequently it is impossible to secure ideal spacing and arrangement of branches the first time the tree is pruned. As the main stem or trunk grows higher, you can select additional scaffold branches, and can remove some of the lower ones which are too close together. Spacing between main branches on a sour cherry can be somewhat closer than with *apple, pear, plum,* and *sweet cherry.*

If you plant a 2-year-old tree, make the initial selection of scaffold branches when the tree is set out. Save additional branches as the trunk extends upward and produces other laterals.

The main branches of the tree should make a rather wide angle at the point of attachment to the trunk. Wide-angled branches are essential if the frame-work is to be strong and long lived. Branches which make a sharp angle at their point of union with the trunk may be weak and may break down under a heavy crop of fruit or during a wind or ice storm. Narrow-angled branches also are more likely to have winter injury than wide-angled crotches.

During the second, third, and fourth years young trees are in the orchard, complete your selection and initial development of scaffold branches. When you have secured four or five well-spaced main branches, cut back the trunk just above the top scaffold branch. This will suppress the continued increase in height to a certain extent and encourage the development of a flattened, bowl-shaped tree.

During these early years the most important goal is to develop strong, well-spaced scaffold branches and maintain a good balance of growth in the young tree. As the scaffold branches become established, encourage strong lateral branches to develop, with none closer than 15 inches from the trunk.

To Train a Young Peach Tree by the Open-Center System—head the trunk at a height of about 24 inches when you plant the tree. Cut back all lateral branches to stubs containing one bud, as illustrated in Fig. 4. Shoots will develop from these stubs and from other buds along the trunk. When the shoots are 8 to 12 inches long, in late June or early July, select three or four which are well-spaced around the trunk and cut off the others. These scaffold branches will be rather closely grouped at their bases (see Fig. 5), but if they have wide angles and are well spaced around the trunk, a strong open-center tree will be produced.

Peach trees are not as commonly trained to a modified-leader system as to the open-center form. This may be caused partly by the opinion that open-center trees are somewhat lower than modified-leader trees and therefore easier to manage. Another reason may be that it is sometimes difficult to maintain a good balance of growth

between the upper and lower branches of modified-leader trees. Lower branches frequently show a pronounced tendency to grow faster than the upper branches and, in so doing, may "choke-out" the top and deform the tree.

To Train a Peach by the Modified-Leader System—head the trunk at a height of about 3 feet when you plant the tree. Cut all lateral branches back to one-bud spurs, as in Fig. 4. When the lateral shoots have developed to a length of 8 to 12 inches, in late June or early July, select scaffold branches. Cut away all but four or five shoots which are about 4 or 5 inches apart vertically along the trunk. Inspect the growth of these laterals several times during the remainder of the season and during the second and third years to be sure the lower branches do not grow too rapidly and suppress development of branches higher up on the trunk. If the lower branches start to grow too rapidly head them back to a strong lateral to maintain proper balance throughout the tree.

Prune Bearing Fruit Trees—for balance only. After having developed a strong framework of scaffold branches during the first 2 or 3 years in the orchard, the trees need only light pruning until they are 5 or 6 years old. The training period is over and the main

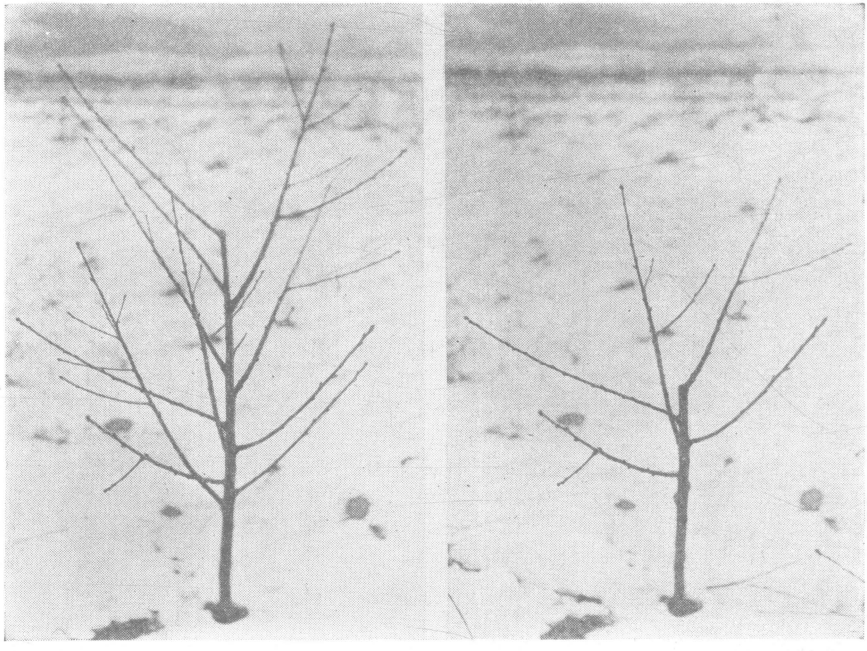

Fig. 5.—(a) Peach tree after one year's growth in the orchard. In pruning at planting time tree was headed too high, which resulted in weak growth of low side branches. (b) Same tree after pruning. Note that central wood has been removed, leaving well spaced scaffold branches to develop to open center tree. No cutting of side branches has been made.

purpose of future pruning is to maintain balance throughout the tree and prevent a thick congested top to develop. This makes spraying, pruning, thinning, and harvesting difficult.

As the Trees Approach Middle Age—increase pruning somewhat to prevent branches from growing too tall. When the branches increase in length to a point where they are hard to handle, head back the ends about 2 feet or more to a strong lateral. It is more efficient to head back rather heavily a few branches which are growing too tall than to attempt to cut back a large number of tips only a short distance each year.

As indicated previously, remove all broken, diseased, or badly damaged branches. Thin out crowded and crossed branches. Cut away water sprouts usually along with the weak-growing and down-hanging branches around the lower and inside parts of the tree. Avoid excessive pruning yet do enough to maintain good balance and growth throughout the tree.

Peach trees need heavier annual pruning than most other fruit trees in order to promote good terminal growth. If development slows down to a point below the lengths discussed in the section on fertility, you may need to increase pruning to open up and head back the tree and encourage more vigorous growth. Figures 6 and 7 illustrate a mature peach tree before and after pruning. Use care with a narrow-based stepladder, such as is shown in Fig. 6. This type of stepladder is easily upset and may reult in serious injury. A broad-based 3-legged stepladder is much better.

Avoid excessive pruning in *pears* as this promotes succulent growth which is susceptible to fire blight.

Thinning

When a heavy set of fruit occurs on *apple* and *peach* trees it is frequently desirable to thin the crop so the harvested fruit may be larger in size. Thin as soon as possible after the June drop. Usual procedure is to remove the smaller or insect or disease damaged fruit from all clusters having two or more fruit and to leave only one fruit from each cluster. These single fruits are then thinned to a spacing of about 6 or 8 inches apart along the branch. On vigorous trees, which normally produce large fruit, the spacing can be relatively close. With trees of low vigor or varieties which usually produce small fruit, spacing must be increased.

Pears are rarely thinned and *plums* only when large sized fruit are especially desired.

Harvesting

In general, home gardeners should not harvest fruit until it is fully ripe in order that the highest quality may be secured. Proper time to pick the crop is determined in part by taste as well as by ease of picking and change in firmness and color. Experience and good judgment are the best teachers.

Pears are an exception to this rule. When *pears* are allowed to ripen until soft or yellow on the tree, they are worthless. Pick pears when they have obtained good size and before they turn yellow. Insect-injured fruit usually ripens prematurely. When this fruit colors or falls from the tree, the remainedr of fruit may also be harvested.

As soon as fruit is picked place it in the shade or even better in a cool cellar or refrigerated store-room. If the fruit is to be stored for any length of time, do not allow it to become overripe. Exercise care in picking and handling the product to avoid bruises which impair quality and increase the speed of rotting and storage breakdown.

Disease and Insect Control

Extension Leaflet, L-1, "Disease and Insect Control for Home Orchards and Small Fruits," was prepared by the Department of Botany and Entomology of The Ohio State University and the Ohio Agricultural Experiment Station for home orchards. *The spray pro-*

Fig. 6.—A 6-year-old Elberta peach tree which has a strong framework Figure 7 shows how the tree should be pruned in March or April.

grams included are not recommended for the commercial grower. The leaflet is available from your local county agricultural agent. The programs should, under average conditions, allow the home gardener to produce fruit of a reasonable quality with a minimum of spraying.

When you need larger quantities of spray, such as for a 50- or 100-gallon tank, consult the regular commercial orchard spray bulletin, *SB-2, Spraying Program and Pest Control for Commercial Fruit Crops.* For additional information about growing fruit trees, write your county agricultural agent.

Fig. 7.—After pruning, tree in Fig. 6 looks like this. Tips of all strong growing branches have been cut back 12 to 24 inches to a side branch in order to keep tree within a height and width spread of about 13 feet. Center has been opened for light. Lower limbs which tend to droop to ground with fruit have been removed entirely or to an upward-growing lateral. Dead twigs in center of tree, which may harbor disease, also have been removed. Amount of wood removed is near the ladder.

Cover by Tom Crane

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